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United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

# Idaho

## Basin Outlook Report

### April 1, 1997





# Basin Outlook Reports

## and Federal - State - Private Cooperative Snow Surveys

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*For more water supply and resource management information, contact:*

Your local Natural Resources Conservation Service Office

or

Natural Resources Conservation Service

Snow Surveys

3244 Elder Street, Room 124

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### *How forecasts are made*

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Natural Resources Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

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# **IDAHO WATER SUPPLY OUTLOOK REPORT**

**APRIL 1, 1997**

## **SUMMARY**

March brought heavy snowfall to northern Idaho, further increasing the snowpacks and raising concerns of flooding in that portion of the state. In the south, warm conditions started melting the low and middle elevation snowpacks, helping to ease fears of flooding later this spring. Snowpacks throughout most of the state are in the 140% of average range. Streamflow forecasts call for well above normal volumes, and several streams are forecast to produce near record amounts. Reservoir managers continue to draft major reservoirs in preparation for the high spring runoff. The threat of snowmelt flooding is very real this year. Timing of snowmelt and amount of spring rainfall will determine the severity.

## **SNOWPACK**

Northern Idaho received heavy snowfall during March, increasing snowpacks by several percentage points. Low elevation snowpacks in the Panhandle are well above normal (180 to over 200%), raising concerns of flooding if warm temperatures and heavy rainfall were to occur suddenly. Snowfall in the central mountains and the upper Snake was near average, but warm temperatures caused some melting in the low elevations. Currently, snowpacks in the central mountains and upper Snake range from 130 to 150% of average -- down 10 to 20 percentage points from last month. Drier conditions and warmer temperatures prevailed along the southern edge of the state, with significant melt noted in the lower elevations. Snowpacks dropped 15 to 40 percentage points during March, and currently range from 90% of average in the Owyhee basin to 140% in the southeast. Snowmelt rates in central and southern Idaho have been low due to cool nighttime temperatures, and streamflows have been moderate so far this spring. Continuation of this pattern will help to ease flooding concerns later this spring when the melt season begins in earnest.

## **PRECIPITATION**

March brought heavy precipitation to northern Idaho, near average amounts to the central mountains, and below average amounts to the southern edge of the state. Conditions were even drier in the lower elevations in southern Idaho; irrigation has started as wind and warm temperatures are drying the soils. The Idaho Panhandle received one of its heaviest precipitation months of the water year with 187% of average. The Clearwater basin was not far behind at 177%. South of the Clearwater precipitation amounts dropped off rapidly. Water year to date precipitation is now fairly consistent statewide, ranging from 123% of normal along the southern edge of the state to 148% in the west central mountains. Most of the state is in the 140% of average range for the year.

## **RESERVOIRS**

Storage in most major reservoirs continued to drop during March as operators prepared for the high spring runoff. The Clearwater, Snake, Boise, and Payette river basins all report significant decreases in storage contents. The Boise system reports the lowest storage since Lucky Peak was built in 1955. When Palisades reaches its target level, it will be the most flood control space ever made available in that reservoir. Reservoirs along the southern edge of the state report increases since March 1 as inflows rise in response to warmer weather. Statewide, an index of 16 reservoirs reports 50% of capacity, or 72% of average for April 1. Flood control operations will likely continue into June until peak inflows have passed. Most reservoirs are expected to fill this year, and sustained high flows should delay the typical summer drawdown of irrigation reservoirs until later in the summer. Managers of small private irrigation reservoirs should be aware of the potential for uncontrolled spill this spring; assistance is available from the NRCS for reservoir management guidance.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive, and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in the back of this report.

## ***STREAMFLOW***

Streamflows during March were above average throughout the entire state. This has been the case in nearly all basins since the water year began last October! Many streamflow forecasts have changed from the figures reported last month due to March weather conditions, but several streams are still expected to yield near record volumes. Heavy snowfall in the north caused most forecasts to increase by 10-20 percentage points. Forecasts in the Panhandle and Clearwater basins currently call for 140-170% of normal runoff. In the upper Snake basin, forecasts remain essentially the same as last month and also call for 140-170% of normal runoff. In the central and southern mountains, drier and warmer conditions caused most forecasts to drop significantly from last month. Even so, forecasts for central and southern Idaho still call for 150-190% of average. The exceptions are the Weiser and Owyhee rivers which are forecast to yield 133 and 106%, respectively. Depending on the timing of snowmelt and amounts of spring rainfall, peak flows could be substantial this year. Residents in flood prone areas should monitor weather conditions closely. The National Weather Service will issue flood watches and warnings as the situation dictates.

## ***RECREATION OUTLOOK***

All of the recreational rivers in Idaho are expected to yield well above average runoff this year, with some streams forecast near their record volumes. Forecasts for the Clearwater, Salmon, Payette, and Snake basins call for at least one and a half times their normal runoff. High seasonal volumes also mean high peak flows; depending on the timing of snowmelt and the amount of spring rainfall, peak flows could be very high this year. Novice river runners should be aware of the hazards of high flows and cold water and should exercise caution until water levels drop to a more forgiving level. There will be an extended boating season this year even after peak flows pass. Reservoir users can expect reservoirs to be drawn down during the spring, but after peak flows are past they should refill and remain full well into the summer. All in all, this record snowfall year will bless Idaho with abundant outdoor recreation opportunities.

## ***WATER SUPPLY FORECASTING PRODUCTS ON THE INTERNET***

Water Supply Forecasting products are now available on the INTERNET. These products include the SNOTEL Update Reports, State Basin Outlook Reports, and products previously published in the Water Supply Outlook for the Western United States.

The Universal Resource Locator (URL) for our home page is: <http://id.nrcs.usda.gov>

You can access the Anonymous FTP server by pointing your INTERNET browser (Netscape, Mosaic, etc.) to: <ftp://ftp.wcc.nrcs.usda.gov>

We will continue to add more products to our Home Page and Anonymous FTP server and welcome any comments and suggestions you might have. Questions and comments should be directed to the NRCS Snow Survey.

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# IDAHO SURFACE WATER SUPPLY INDEX (SWSI)

As of April 1, 1997

The surface water supply index (swsi) is predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

SWSI values are published January through May, and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

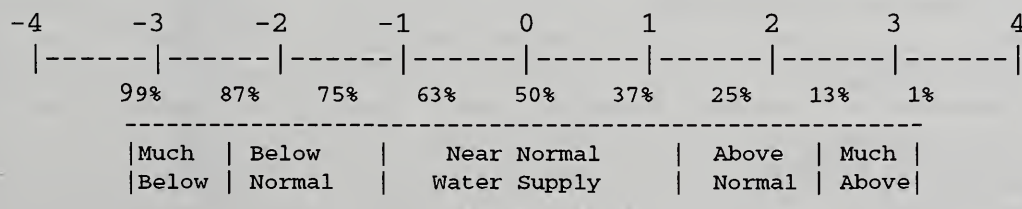
The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US Department of Commerce, National Weather Service  
US Bureau of Reclamation  
Idaho Water Users Association

US Army Corps of Engineers  
Idaho Department of Water Resources  
PacifiCorp

<i>BASIN or REGION</i>	<i>SWSI Value</i>	<i>Most Recent Year With Similar SWSI Value</i>	<i>Agricultural Water Supply Shortage May Occur When SWSI is Less Than</i>
PANHANDLE	3.9	1972	NA
CLEARWATER	3.5	1972	NA
SALMON	3.6	1982	NA
WEISER	2.0	1965	NA
PAYETTE	3.7	1971	NA
BOISE	3.5	1971	-2.6
BIG WOOD	3.5	1982	-1.4
LITTLE WOOD	3.2	1982	-2.1
BIG LOST	3.1	1982	-0.8
LITTLE LOST	3.8	1984	0.0
HENRYS FORK	3.8	1984	-3.3
SNAKE (AMERICAN FALLS)	2.8	1972	-2.0
OAKLEY	2.4	1983	0.0
SALMON FALLS	3.6	1986	0.0
BRUNEAU	3.0	1982	NA
OWYHEE	1.6	1993	NA
BEAR RIVER	1.3	1982	-3.8

## SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION



Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply", represents three SWSI units and would be expected to occur about one third (36%) of the time.

# B A S I N - W I D E S N O W P A C K S U M M A R Y

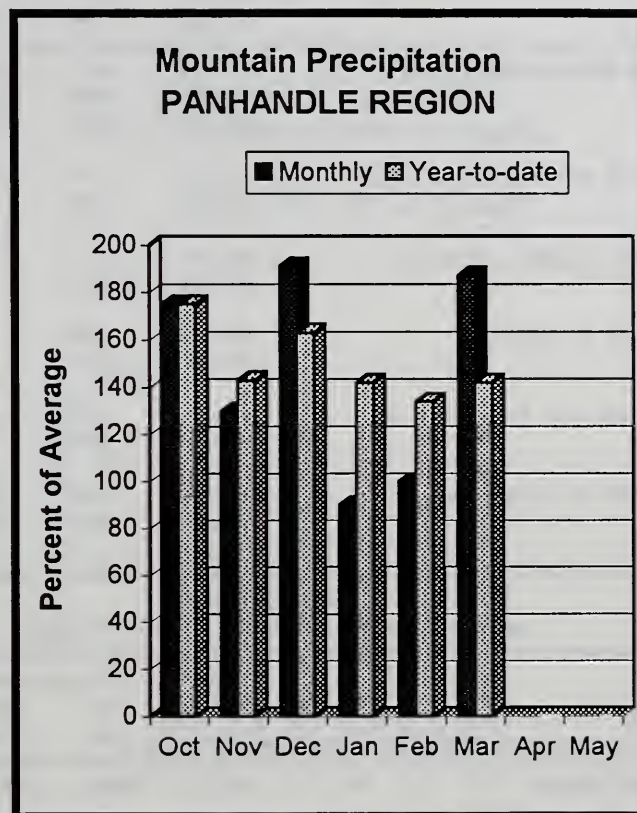
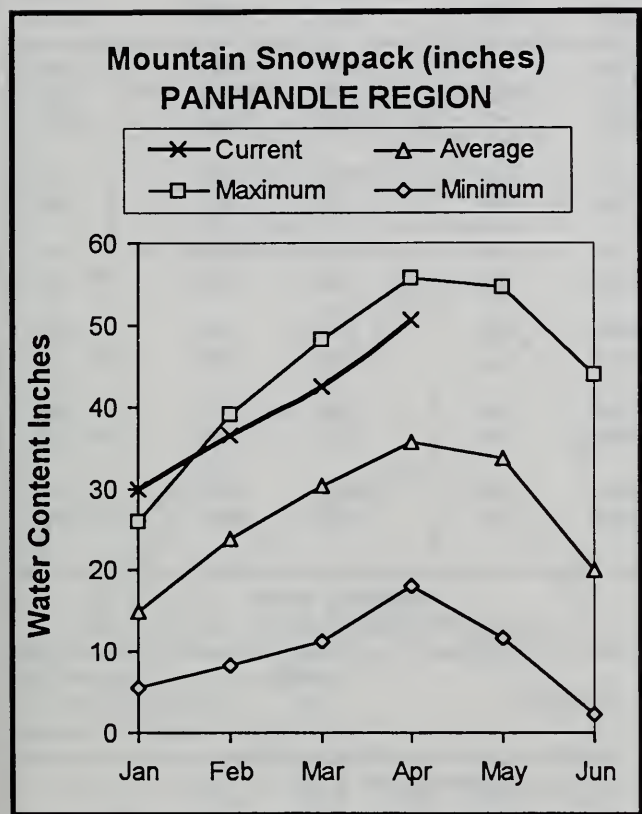
APRIL 1997

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
*****	*****	*****
Kootenai ab Bonners Ferry	144%	142%
Moyie River	124%	128%
Priest River	203%	149%
Pend Oreille River	151%	149%
Rathdrum Creek	396%	184%
Hayden Lake	450%	216%
Coeur d'Alene River	222%	153%
St. Joe River	186%	153%
Spokane River	229%	160%
Palouse River	287%	165%
North Fork Clearwater	173%	153%
Lochsa River	149%	147%
Selway River	151%	154%
Clearwater Basin Total	167%	152%
Salmon River ab Salmon	124%	147%
Lemhi River	118%	128%
Middle Fork Salmon River	120%	137%
South Fork Salmon River	125%	133%
Little Salmon River	137%	125%
Salmon Basin Total	125%	137%
Mann Creek	131%	94%
Weiser River	134%	105%
North Fork Payette	137%	128%
South Fork Payette	128%	130%
Payette Basin Total	132%	128%
Middle & North Fork Boise	135%	143%
South Fork Boise River	128%	136%
Mores Creek	151%	137%
Boise Basin Total	134%	134%
Canyon Creek	107%	62%
Big Wood ab Magic	135%	151%
Camas Creek	130%	117%
Big Wood Basin Total	134%	143%
Little Wood River	145%	143%
Fish Creek	160%	117%
Big Lost River	148%	151%
Little Lost River	127%	132%
Camas-Beaver Creeks	129%	104%
Henrys Fork River	140%	152%
Teton River	140%	149%
Snake above Jackson Lake	118%	148%
Gros Ventre River	114%	145%
Hoback River	121%	147%
Greys River	118%	138%
Salt River	113%	130%
Snake above Palisades	118%	146%
Willow Creek	213%	218%
Blackfoot River	118%	126%
Portneuf River	125%	137%
Snake abv American Falls Resv	127%	152%
Raft River	117%	139%
Goose-Trapper Creeks	107%	124%
Salmon Falls Creek	109%	121%
Bruneau River	87%	108%
Owyhee Basin Total	90%	92%
Smiths & Thomas Forks	118%	136%
Bear River ab WY-ID line	102%	127%
Montpelier Creek	118%	135%
Mink Creek	134%	139%
Cub River	134%	151%
Bear River ab ID-UT line	117%	136%
Malad River	115%	127%
Green River ab Warren Bridge	117%	150%
Upper Green River (West Side)	110%	139%
New Fork River	122%	138%
Big Sandy River/Eden Valley	134%	145%
Green River above Fontenelle	113%	141%
Hams Fork River	115%	132%
Green River above Flaming Gorge	106%	131%



# PANHANDLE REGION

## APRIL 1, 1997



## WATER SUPPLY OUTLOOK

Cool wet weather in March allowed the snowpack to continue building in the Idaho Panhandle. Precipitation for the month was well above normal -- 187% of average -- the heaviest in the state. This brings the water year total precipitation to 142% of average -- even greater than last year. Snowpacks range from 150-165% of average for most basins in this region and are the highest since the earlier 1970s. Snowpacks in the lower elevation drainages of Hayden Lake and Rathdrum Creek are nearly twice normal. Sherwin SNOTEL site, located at 3,200 feet in the St. Maries River basin, still has 17.9 inches of snow water equivalent, 158% of average. There is heightened concern for flooding if warm weather occurs suddenly or if rain-on-snow events occur. Reservoir storage is above normal for the natural lakes and reservoirs in this region. Streamflow forecasts range from 141% of average for the Priest River to 174% for the Coeur d'Alene River at Enaville. Residents in low lying areas should monitor weather conditions closely this spring. With both low and high elevation snowpacks well above average, there is the potential for streams to rise rapidly. Rivers will be high for an extended period of time this spring and summer; the heavy mountain snowpacks will take a long time to melt. Precipitation in February was near normal, bringing the water year total to 134% of average. Snowpacks are approximately 150% of average for most basins in the region. However, snowpacks in the lower elevation drainages of Hayden Lake and Rathdrum Creek are nearly twice their normals. There is heightened concern for flooding of low lying areas if rain-on-snow events or warm weather occurs suddenly. Reservoir storage is near normal for the natural lakes and reservoirs in this region. Streamflow forecasts did not change significantly from the figures reported last month, and range from 112% of average for the Kootenai River at Leonia to 150% for the Spokane River. Residents in low lying areas should monitor weather conditions closely this spring. With both low and high elevation snowpacks well above average, streams may rise rapidly if warm weather or heavy rainfall suddenly occurs.

PANHANDLE REGION  
Streamflow Forecasts - April 1, 1997

Forecast Point	Forecast Period	<<==== Drier		Future Conditions		==== Wetter >>>		30-Yr Avg. (1000AF)
				Chance Of Exceeding *				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
KOOTENAI at Leonia (1,2)	APR-JUN	5735	6495	6840	120	7185	7945	5701
	APR-JUL	7235	8181	8610	120	9039	9985	7199
	APR-SEP	8320	9407	9900	120	10393	11480	8275
CLARK FK at Whitehorse Rpd (1,2)	APR-JUN	12220	13633	14275	142	14917	16330	10050
	APR-JUL	14190	15847	16600	142	17353	19010	11730
	APR-SEP	15648	17472	18300	142	19128	20952	12910
PEND OREILLE Lake Inflow (1,2)	APR-JUN	14125	15848	16630	146	17412	19135	11390
	APR-JUL	16548	18372	19200	146	20028	21852	13150
	APR-SEP	18098	20094	21000	146	21906	23902	14370
PRIEST nr Priest River (1,2)	APR-JUL	943	1085	1150	141	1215	1357	814
	APR-SEP	1009	1161	1230	142	1299	1451	868
COEUR D'ALENE at Enaville	APR-JUL	1202	1284	1340	174	1396	1478	770
	APR-SEP	1267	1352	1410	174	1468	1553	809
ST.JOE at Calder	APR-JUL	1768	1870	1940	166	2010	2112	1169
	APR-SEP	1872	1978	2050	166	2122	2228	1237
SPOKANE near Post Falls (2)	APR-JUL	4259	4522	4700	179	4878	5141	2633
	APR-SEP	4468	4737	4920	180	5103	5372	2730
SPOKANE at Long Lake	APR-JUL	4563	4853	5050	172	5247	5537	2936
	APR-SEP	4935	5236	5440	172	5644	5945	3159

PANHANDLE REGION Reservoir Storage (1000 AF) - End of March					PANHANDLE REGION Watershed Snowpack Analysis - April 1, 1997			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNGRY HORSE	3451.0	1426.0	1893.0	2046.0	Kootenai ab Bonners Ferry	38	144	142
FLATHEAD LAKE	1791.0	870.2	1105.0	751.9	Moyie River	3	124	128
NOXON RAPIDS	335.0	302.0	222.2	231.3	Priest River	5	203	149
PEND OREILLE	1561.3	901.2	908.0	813.7	Pend Oreille River	110	151	149
COEUR D'ALENE	238.5	307.3	141.7	170.1	Rathdrum Creek	4	396	184
PRIEST LAKE	119.3	83.0	65.1	61.2	Hayden Lake	2	450	216
					Coeur d'Alene River	10	222	153
					St. Joe River	5	186	153
					Spokane River	19	229	160
					Palouse River	2	287	165

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

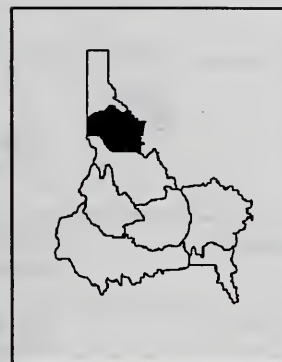
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

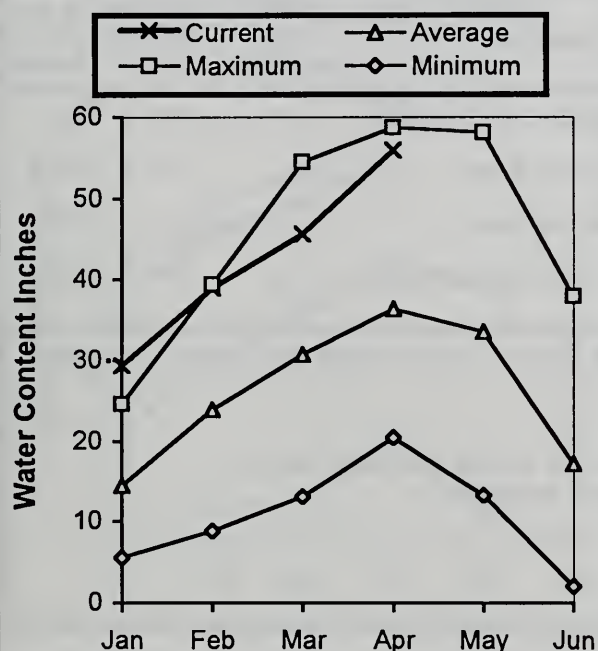


# CLEARWATER RIVER BASIN

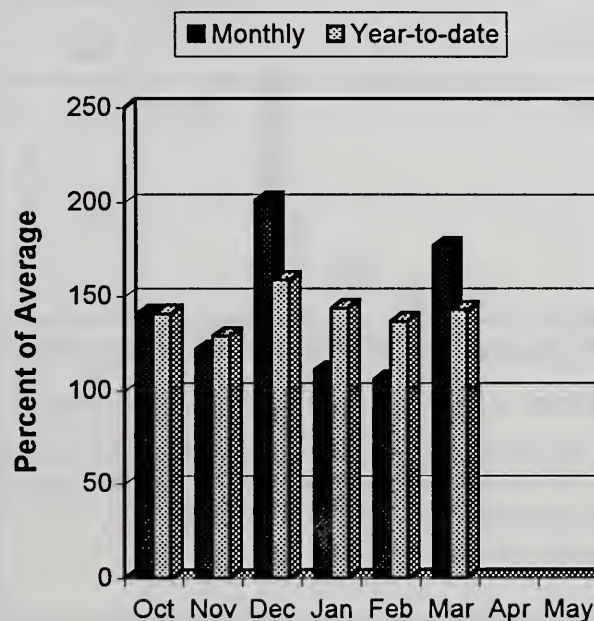
## APRIL 1, 1997



**Mountain Snowpack (inches)  
CLEARWATER RIVER BASIN**



**Mountain Precipitation  
CLEARWATER RIVER BASIN**



## WATER SUPPLY OUTLOOK

A cool, wet March brought heavy snowfall to the Clearwater basin. March precipitation was 177% of average – the second heaviest month of the water year. This brings the total precipitation to 143% of average for the water year. Overall, the snowpack is 152% of average, the second highest since 1961 when most snow measurements started. Only 1972 had a greater snowpack on April 1. Both low and high elevation snowpacks are well above average for this time of year. Lost Lake SNOTEL, located at 6,110 feet near the NF Clearwater and St. Joe basin divide, has 97.9 inches of snow water; the highest since 1974 when 107 inches was measured. Snow depth levels range from about eight feet at Shanghi Summit SNOTEL site (4,570 feet) to over 18 feet at Cool Creek SNOTEL (6,280 feet)! Streamflow forecasts increased from last month due to the heavy precipitation. Inflow to Dworshak Reservoir is forecast at over 4.5 million acre-feet for the April-September period, 160% of average. Dworshak Reservoir is nearing its minimum storage level of 1.4 million acre-feet in preparation for the high runoff. The Clearwater River at Spalding is forecast at 155% of average. Residents in low lying areas should monitor weather conditions closely this spring. With both low and high elevation snowpacks well above average, there is the potential for streams to rise rapidly if warm weather or rainfall suddenly occurs. Streams will be high for an extended period of time this summer; the heavy mountain snowpacks will take a long time to melt.

CLEARWATER RIVER BASIN  
Streamflow Forecasts - April 1, 1997

Forecast Point	Forecast Period	<==== Drier ==== Future Conditions ==== Wetter >====>						30-Yr Avg. (1000AF)
				Chance Of Exceeding *				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
DWORSHAK RESV INFLOW (2)	APR-JUL	3939	4154	4300	160	4446	4661	2692
	APR-SEP	4187	4415	4570	160	4725	4953	2866
CLEARWATER at Orofino (1)	APR-JUL	5681	6554	6950	147	7346	8219	4718
	APR-SEP	5989	6911	7330	147	7749	8671	4976
CLEARWATER at Spalding (1,2)	APR-JUL	10022	11245	11800	155	12355	13578	7618
	APR-SEP	10618	11912	12500	155	13088	14382	8052

CLEARWATER RIVER BASIN Reservoir Storage (1000 AF) - End of March					CLEARWATER RIVER BASIN Watershed Snowpack Analysis - April 1, 1997			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr Average	
DWORSHAK	3459.0	1466.2	2027.0	1996.2	North Fork Clearwater	13	173	153
					Lochsa River	3	149	147
					Selway River	5	151	154
					Clearwater Basin Total	20	167	152

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

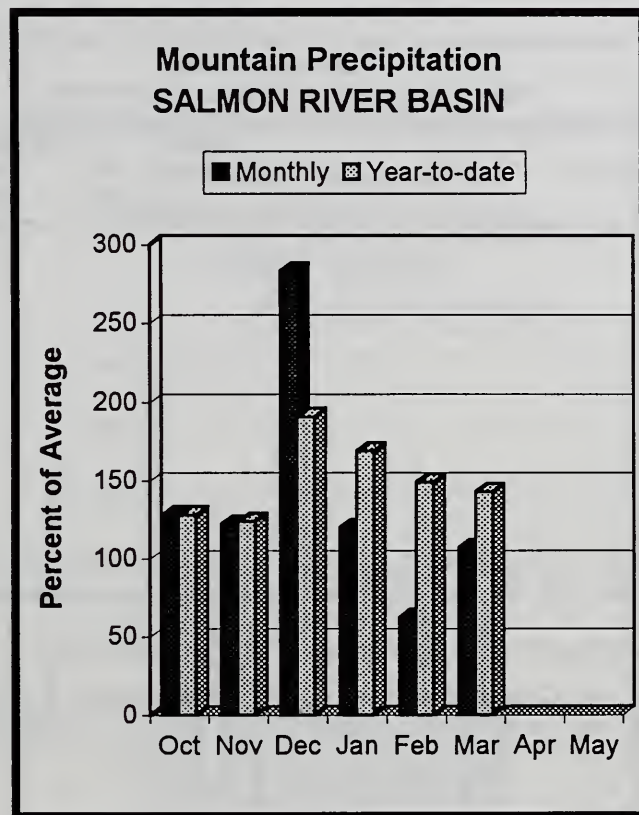
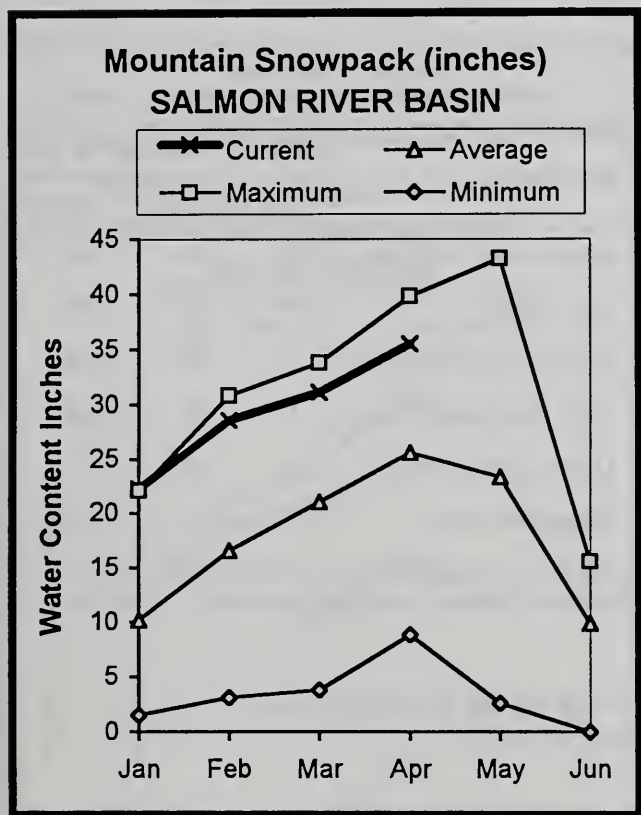
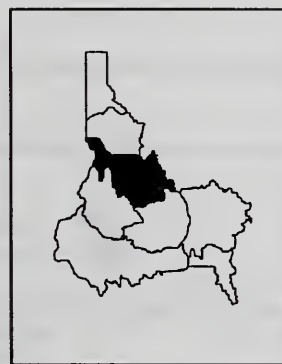
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.



# SALMON RIVER BASIN

## APRIL 1, 1997



## WATER SUPPLY OUTLOOK

March precipitation was slightly above normal, bringing the water year total to 143% of average. Snowpacks decreased slightly (in terms of percent of average) from last month but are still well above normal. Only 1965 and 1974 had more snow on April 1 than this year. Snowpack percentages range from 125% of average for the Little Salmon basin to 147% for the Salmon above Salmon. The basin as a whole reports 137% of average snowpack. Streamflow forecasts remain high in spite of the decline in snowpack percentages. The Salmon River at Salmon is forecast at 1.7 million acre-feet for the April-September period, 170% of average. The April-September forecast for the Salmon River at White Bird is 9.76 million acre-feet, 148% of average. There is the potential for very high streamflow peaks this season because of the abundant snowpack. Spring precipitation and air temperatures during the snow melt season will determine the peak flows of the Salmon River and its tributaries this year. River runners should use caution when evaluating their high water boating capabilities. The abundant snowpacks will provide extended boating opportunities well after the snow melt peaks occur.

**SALMON RIVER BASIN**  
Streamflow Forecasts - April 1, 1997

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
				Chance Of Exceeding *				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SALMON at Salmon (1)	APR-JUL	1169	1383	1480	170	1577	1791	869
	APR-SEP	1367	1617	1730	170	1843	2093	1019
SALMON at White Bird (1)	APR-JUL	7420	8376	8810	148	9244	10200	5956
	APR-SEP	8219	9279	9760	148	10241	11301	6602

SALMON RIVER BASIN Reservoir Storage (1000 AF) - End of March					SALMON RIVER BASIN Watershed Snowpack Analysis - April 1, 1997			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					Salmon River ab Salmon	10	124	147
					Lemhi River	8	118	128
					Middle Fork Salmon River	3	120	137
					South Fork Salmon River	3	125	133
					Little Salmon River	4	137	125
					Salmon Basin Total	30	125	137

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

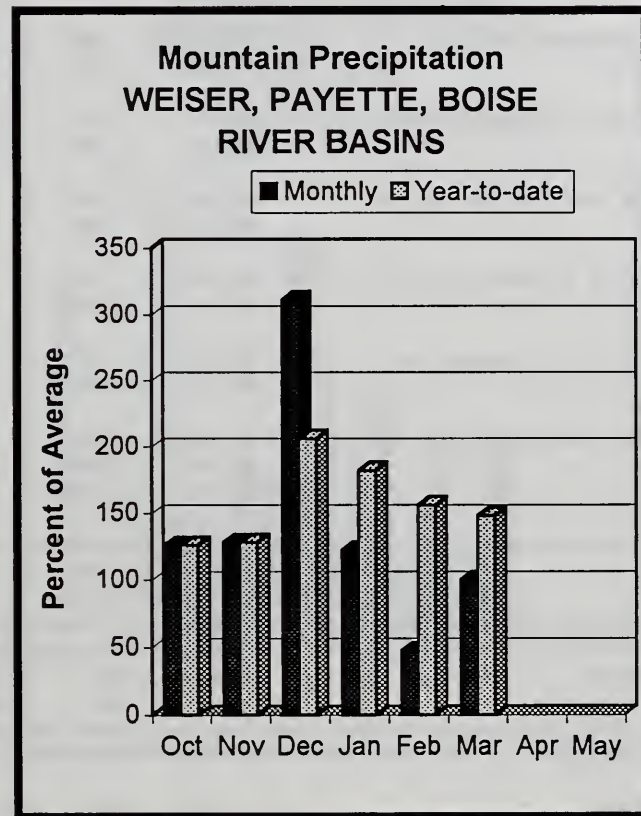
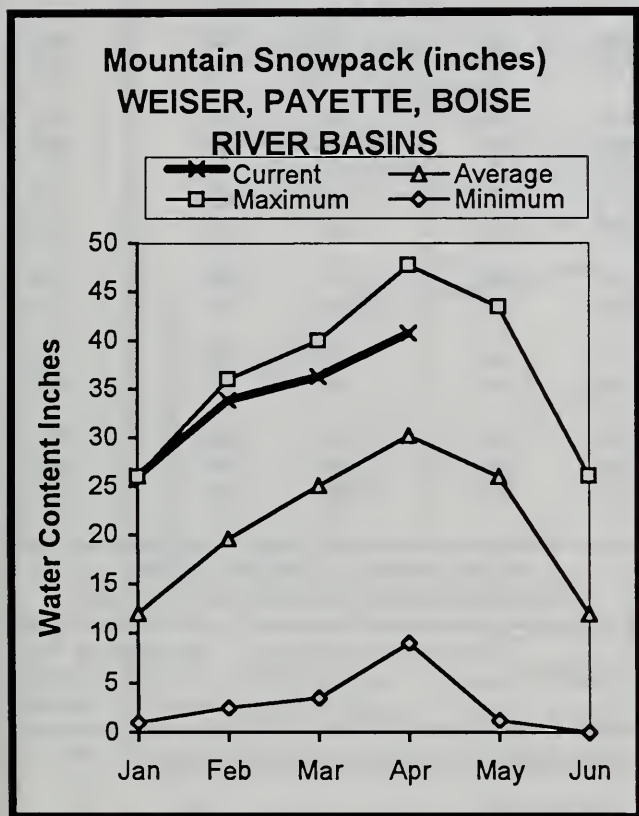
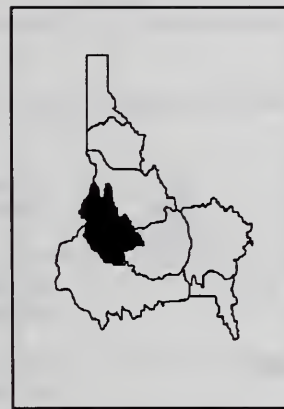
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# WEISER, PAYETTE, BOISE RIVER BASINS

APRIL 1, 1997



## WATER SUPPLY OUTLOOK

Mountain precipitation in March was near average, bringing the water year total to 148% of average – the highest in the state. Snowpack percentages decreased 10-15 points during March due to the unusually warm weather. The Boise basin reports 134% of average (the fifth highest since 1961), the Payette reports 128%, and the Weiser is 105%. The snowpack has started to melt at the lower elevations, while the mid and high elevations continue to accumulate snow. Reservoirs are still being drafted in preparation for the high runoff. Currently, the Boise reservoir system is one-third full, the lowest April 1 amount since Lucky Peak Dam was built in 1955. The Payette system is 43% of capacity. Streamflow forecasts for the Boise and Payette rivers have dropped slightly from the forecasts earlier this year but are still near record high levels. The Boise River at Boise is forecast at 2.54 million acre-feet or 179% for the April-July period. The Payette River near Horseshoe Bend is forecast at 175% (April-July) while the Weiser River is forecast at 133%. The New Year's Day floods damaged some levees in the Payette and Weiser basins, raising concerns about additional flooding in those areas. With snowpacks well above average, streams will be high this spring and summer. Residents in low lying areas should be prepared for high flows and should monitor weather conditions closely.

WEISER, PAYETTE, BOISE RIVER BASINS  
Streamflow Forecasts - April 1, 1997

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF)		10% (1000AF)	
WEISER nr Weiser (1)	APR-JUL	340	460	515	133	570	690	386				
	APR-SEP	368	497	555	134	613	742	415				
SF PAYETTE at Lowman	APR-JUL	705	741	765	177	789	825	432				
	APR-SEP	792	833	860	176	887	928	488				
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	202	218	225	167	232	248	135				
	APR-SEP	215	232	239	167	246	263	143				
NF PAYETTE nr Cascade (1,2)	APR-JUL	724	804	840	169	876	956	496				
	APR-SEP	754	841	880	165	919	1006	533				
NF PAYETTE nr Banks (2)	APR-JUL	953	1029	1080	167	1131	1207	648				
	APR-SEP	1001	1084	1140	165	1196	1279	690				
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	2527	2735	2830	175	2925	3133	1618				
	APR-SEP	2685	2916	3020	172	3124	3355	1755				
BOISE near Twin Springs (1)	APR-JUL	952	1033	1070	170	1107	1188	631				
	APR-SEP	1044	1128	1166	170	1204	1288	686				
SF BOISE at Anderson Rnch Dm (1,2)	APR-JUL	882	949	980	180	1011	1078	544				
	APR-SEP	940	1014	1048	180	1082	1156	582				
MORES CK nr Arrowrock Dam	APR-JUL	232	243	250	194	257	268	129				
	APR-SEP	242	253	260	194	267	278	134				
BOISE nr Boise (1,2)	APR-JUN	2141	2267	2325	184	2383	2509	1264				
	APR-JUL	2300	2465	2540	179	2615	2780	1421				
	APR-SEP	2508	2685	2765	180	2845	3022	1535				

WEISER, PAYETTE, BOISE RIVER BASINS Reservoir Storage (1000 AF) - End of March					WEISER, PAYETTE, BOISE RIVER BASINS Watershed Snowpack Analysis - April 1, 1997			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MANN CREEK	11.1	10.0	10.6	8.7	Mann Creek	2	131	94
CASCADE	703.2	310.8	500.6	377.6	Weiser River	5	134	105
DEADWOOD	161.9	60.2	119.3	90.8	North Fork Payette	8	137	128
ANDERSON RANCH	464.2	152.6	324.0	278.1	South Fork Payette	5	128	130
ARROWROCK	286.6	62.1	125.9	227.8	Payette Basin Total	14	132	128
LUCKY PEAK	293.2	131.9	124.2	153.2	Middle & North Fork Boise	7	135	143
LAKE LOWELL (DEER FLAT)	177.1	123.7	140.0	152.9	South Fork Boise River	9	128	136
					Mores Creek	5	151	137
					Boise Basin Total	17	134	134
					Canyon Creek	2	107	62

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

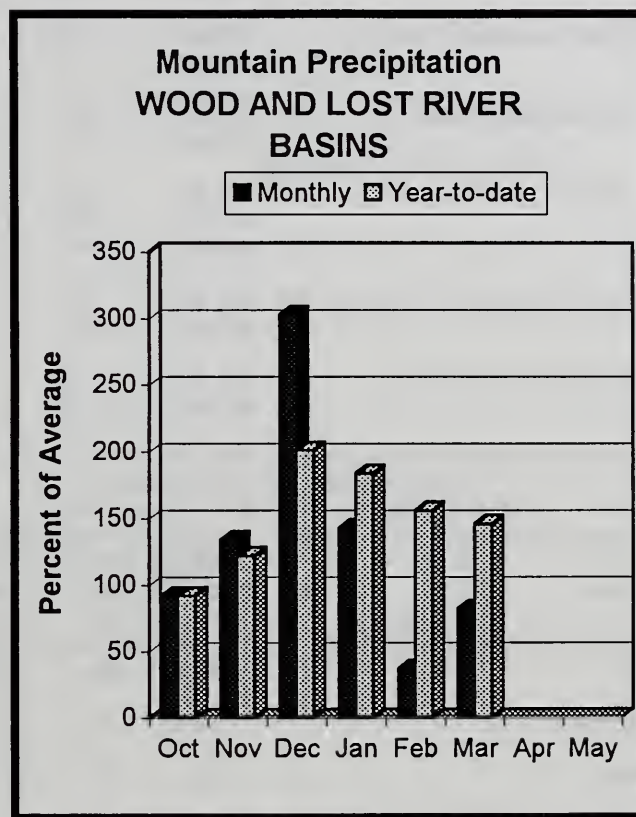
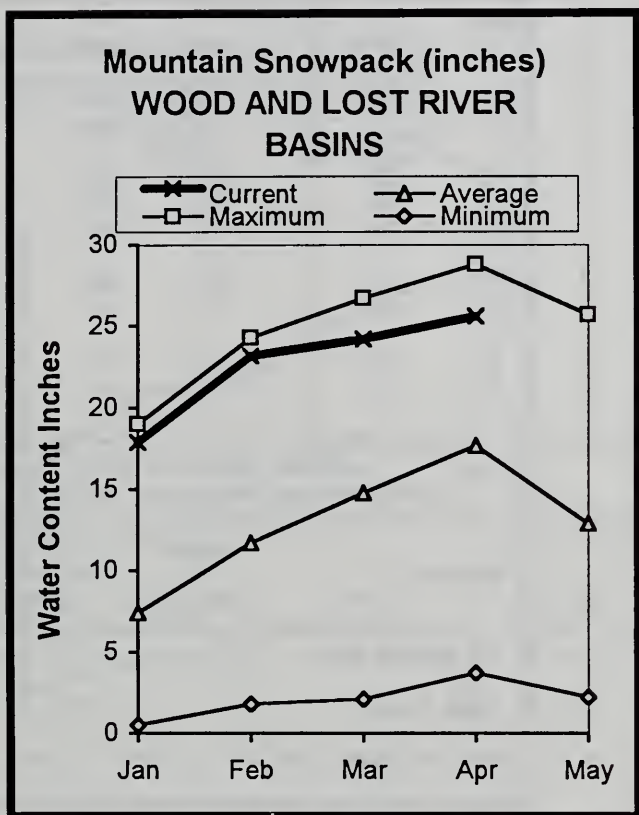
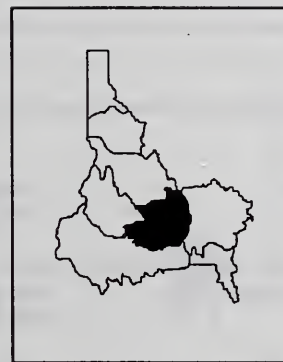
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# WOOD and LOST RIVER BASINS

## APRIL 1, 1997



## WATER SUPPLY OUTLOOK

March brought below normal precipitation for the second consecutive month – good news for an area with extremely heavy snowpacks. March precipitation was 82% of average bringing the water year total to 146%. Low elevation snow started melting in mid-March, but the high elevations continue to build record snowpacks. The snowpack in the Big Wood basin above Magic Reservoir is 151% of average -- essentially the same as the wettest years on record (1965 and 1974). The Big Lost basin also reports a snowpack figure of 151% of average, the fourth highest since 1952. The snowpack in the Little Wood and Little Lost basins is 143 and 132 percent of average, respectively. Fishpole lake snow course, located at 9,300 feet near the Little Wood and Big Lost basin divide, has 40.0 inches of snow water content (87 inches deep), just short of the all time record of 41.2 inches set on May 1, 1995. Most reservoirs in this region have been drafted in anticipation of the high runoff in order to help reduce peak flows below the reservoirs. Magic Reservoir is two-thirds full and storing 123,000 acre-feet; Little Wood Reservoir is one-quarter full, and Mackay Reservoir is about one-third full. The inflow to Magic Reservoir (April-July) is forecast at 560,000 acre-feet, 190% of average, while the Little Wood River is forecast at 163,000 acre-feet, 178% of average. The Big Lost River below Mackay Reservoir is projected at 230,000 acre-feet, 150% of average. With mountain snowpacks at record levels, the potential for very high streamflows exists. Residents in low lying areas should monitor weather conditions closely this spring and be prepared for potential flooding of low lying areas. Temperature and precipitation during the snow melt season will determine how high the rivers will rise.

WOOD AND LOST RIVER BASINS  
Streamflow Forecasts - April 1, 1997

Forecast Point	Forecast Period	<== Drier ==> Future Conditions ==> Wetter ==>>						30-Yr Avg. (1000AF)
		90% (1000AF)		Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)		
		70% (1000AF)				10% (1000AF)		
BIG WOOD near Hailey (1)	APR-JUL	357	410	436	171	462	523	255
	APR-SEP	399	461	490	170	520	590	289
BIG WOOD near Bellevue	APR-JUL	268	304	330	180	357	398	183
	APR-SEP	291	328	355	180	383	426	197
CAMAS CREEK near Blaine	APR-JUL	172	190	202	198	215	234	102
	APR-SEP	173	191	203	197	216	235	103
BIG WOOD below Magic Dam (2)	APR-JUL	507	539	560	190	581	613	295
	APR-SEP	552	587	610	197	633	668	310
LITTLE WOOD near Carey (2)	APR-JUL	142	154	163	178	172	184	92
	APR-SEP	151	165	174	175	183	197	99
BIG LOST at Howell Ranch	APR-JUN	184	201	212	150	223	240	141
	APR-JUL	235	258	273	151	288	311	181
	APR-SEP	267	292	310	151	328	353	206
BIG LOST below Mackay Reservoir (2)	APR-JUL	191	214	230	150	246	269	153
	APR-SEP	231	257	275	150	293	319	184
LITTLE LOST blw Wet Creek	APR-JUL	40	44	47	152	50	54	31
	APR-SEP	49	55	59	151	63	69	39

WOOD AND LOST RIVER BASINS Reservoir Storage (1000 AF) - End of March					WOOD AND LOST RIVER BASINS Watershed Snowpack Analysis - April 1, 1997			
Reservoir	Usable Capacity	*** This Year	Usable Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr Average	
MAGIC	191.5	123.0	162.7	117.4	Big Wood ab Magic	8	135	151
LITTLE WOOD	30.0	14.3	22.3	18.4	Camas Creek	5	130	117
MACKAY	44.4	15.7	37.4	33.3	Big Wood Basin Total	13	134	143
					Little Wood River	4	145	143
					Fish Creek	3	160	117
					Big Lost River	7	148	151
					Little Lost River	4	127	132

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

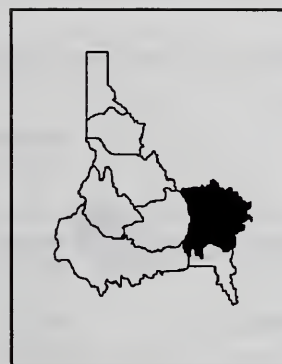
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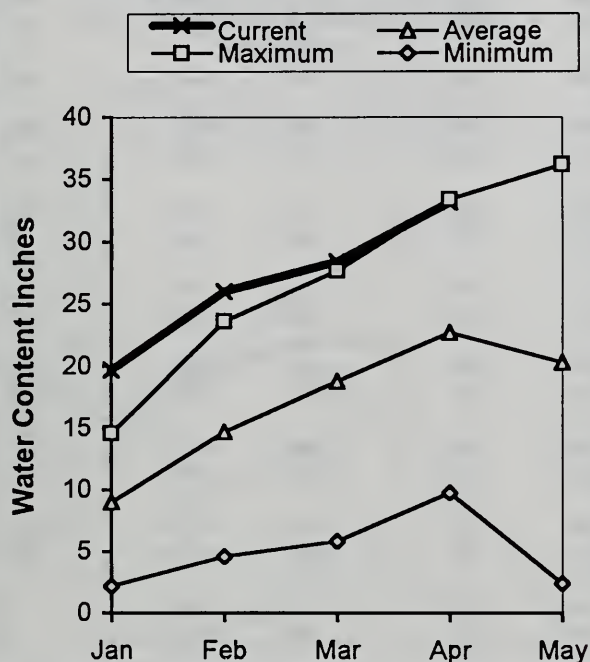


# UPPER SNAKE RIVER BASIN

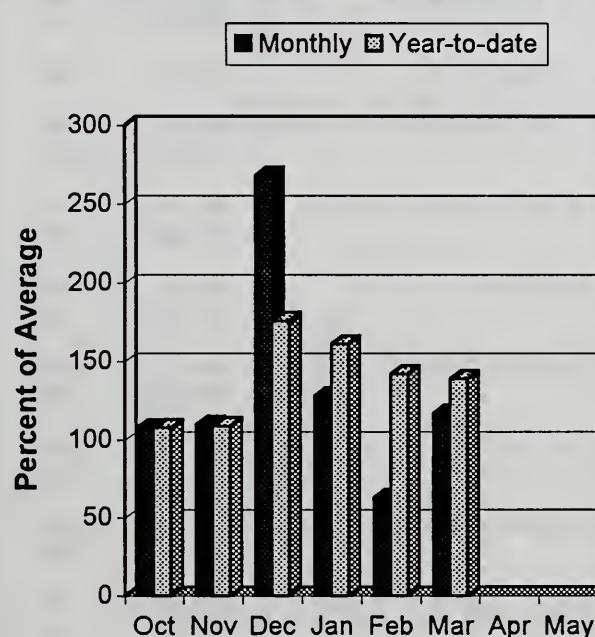
## APRIL 1, 1997



**Mountain Snowpack (inches)**  
**UPPER SNAKE RIVER BASIN**



**Mountain Precipitation**  
**UPPER SNAKE RIVER BASIN**



## WATER SUPPLY OUTLOOK

March precipitation was 117% of average bringing the water year total to 139%. The snowpack in the Henrys Fork and Falls River basins is a new April 1 record (over 150% of average). The Teton basin snowpack is 149% of average, nearly the same as the highest year on record, 1982. The snowpack in the Snake basin above Palisades Reservoir is 146% of average which is below the record set in 1971 of 153%. Snowpacks in the lower elevation drainages (Portneuf, Blackfoot and Willow creek basins) are around 130% of average; the potential for flooding still exists in these areas. Overall, the snowpack in the Snake River basin above American Falls is 152% -- the second highest since 1961. Reservoirs are still being drafted to make space for the high runoff this summer. Combined reservoir storage for the eight major reservoirs in the upper Snake system is 56% of capacity. Current April 1 storage for Jackson, Palisades and American Falls reservoirs is the lowest since 1957. Many streams in this region are forecast at or near their record April-July volumes. The Snake River near Heise is expected to yield 5.12 million acre-feet, 148% of average. Water users can expect streams to be above average for the remainder of this year. There is the potential for flooding in the lower elevations, especially the Portneuf, Henrys Fork and Teton River areas, when this record snowpack starts melting. Residents in low lying areas should be prepared for high streamflow levels and should monitor weather conditions closely.

UPPER SNAKE RIVER BASIN  
Streamflow Forecasts - April 1, 1997

Forecast Point	Forecast Period	<<==== Drier =====		Future Conditions =====		====>> Wetter =====		30-Yr Avg. (1000AF)
		90%	70%	Chance Of Exceeding *		30%	10%	
		(1000AF)	(1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	(1000AF)	(1000AF)	
HENRYS FORK nr Ashton (2)	APR-JUL	669	717	750	138	783	831	544
	APR-SEP	891	947	985	135	1023	1079	730
HENRYS FORK nr Rexburg (2)	APR-JUL	1611	1710	1778	145	1846	1945	1228
	APR-SEP	2025	2135	2210	143	2285	2395	1551
FALLS RIVER nr Squirrel (1,2)	APR-JUL	432	468	485	133	502	538	364
	APR-SEP	514	556	575	133	594	636	432
TETON abv S Leigh Ck nr Driggs	APR-JUL	230	250	263	172	276	296	153
	APR-SEP	300	324	340	171	356	380	199
TETON nr St. Anthony (2)	APR-JUL	565	609	638	170	667	711	375
	APR-SEP	677	725	758	167	791	839	454
SNAKE nr Moran (1,2)	APR-SEP	1150	1253	1300	150	1347	1450	869
SNAKE R abv Palisades Rsvr nr Alpine	APR-JUL	3055	3278	3430	150	3582	3805	2286
	APR-SEP	3471	3753	3945	149	4137	4419	2647
GREYS R abv Palisades Reservoir	APR-JUL	376	412	436	131	460	496	333
	APR-SEP	432	472	500	129	528	568	388
SALT abv Reservoir nr Etna	APR-JUL	334	386	422	132	458	510	320
	APR-SEP	431	490	530	133	570	629	400
PALISADES RESV INFLOW (1,2)	APR-JUL	4190	4610	4800	149	4990	5410	3225
	APR-SEP	4884	5370	5590	149	5810	6296	3762
SNAKE nr Heise (2)	APR-JUL	4593	4907	5120	148	5333	5647	3451
	APR-SEP	5343	5717	5970	148	6223	6597	4048
SNAKE nr Blackfoot (1,2)	APR-JUL	5793	6458	6760	152	7062	7727	4444
	APR-SEP	7283	8017	8351	152	8685	9419	5482
PORTNEUF at Topaz	APR-JUL	79	88	94	130	99	108	72
	APR-SEP	105	114	121	130	128	137	93
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	4212	4953	5290	173	5627	6368	3066
	APR-SEP	4435	5312	5710	173	6108	6985	3303

UPPER SNAKE RIVER BASIN  
Reservoir Storage (1000 AF) - End of March

UPPER SNAKE RIVER BASIN  
Watershed Snowpack Analysis - April 1, 1997

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HENRYS LAKE	90.4	78.8	83.5	80.1	Camas-Beaver Creeks	4	129	104
ISLAND PARK	135.2	103.8	116.5	119.3	Henrys Fork River	12	140	152
GRASSY LAKE	15.2	13.4	13.4	11.2	Teton River	8	140	149
JACKSON LAKE	847.0	552.3	630.8	473.2	Snake above Jackson Lake	13	118	148
PALISADES	1400.0	397.0	683.0	1013.5	Gros Ventre River	3	114	145
RIRIE	80.5	47.2	51.6	44.3	Hoback River	6	121	147
BLACKFOOT	348.7	207.3	241.7	260.7	Greys River	4	118	138
AMERICAN FALLS	1672.6	1155.5	1424.2	1452.5	Salt River	5	113	130
					Snake above Palisades	31	118	146
					Willow Creek	7	212	217
					Blackfoot River	5	118	126
					Portneuf River	6	125	137
					Snake abv American Falls	46	127	152

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

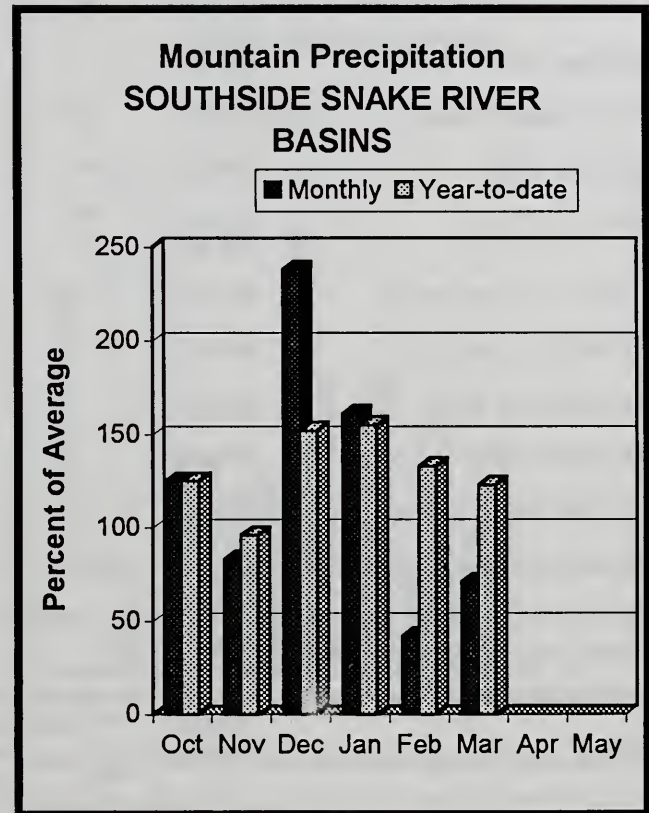
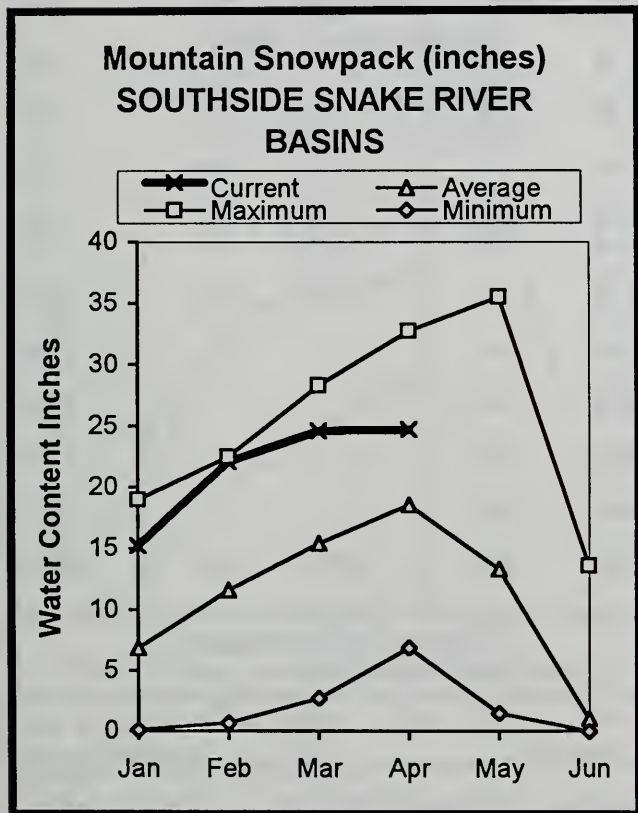
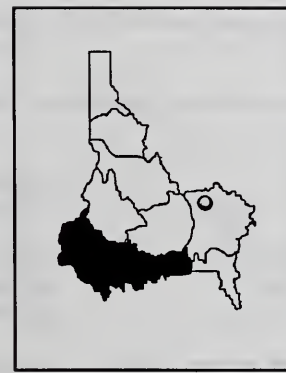
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# SOUTHSIDE SNAKE RIVER BASINS APRIL 1, 1997



## WATER SUPPLY OUTLOOK

Below normal precipitation for the past two months has provided some relief over flooding concerns in these southern Idaho basins. March precipitation was 71% of average, bringing the water year total to 123%. Warm temperatures during the month began melting low and mid-elevation snowpacks, but cool nights kept melt rates low and flooding has been avoided so far this year. Snowpack figures have dropped 20 to 50 percentage points since last month. This is good news from a flooding standpoint; there will be less snow to melt when temperatures turn really warm later this spring. High elevation SNOTEL sites still increased in snowpack, however. Currently, snowpacks are the greatest in the Raft River area at 139% of average. Goose Creek and Salmon Falls Creek basins are around 125% of average while the Bruneau and Owyhee basins have decreased to near normal conditions. Overall, the snowpack in the basins south of the Snake River are the third highest since 1961 -- exceeded only by 1984 and 1965. Most streams across southern Idaho are expected to yield well above average volumes. The Owyhee, however, has already seen its snowmelt peak; the residual volumes are expected to be above average. Weather conditions so far this spring have alleviated some of the flooding concerns. However, reservoir managers and residents in low lying areas still need to be aware of the possibility of high flows when the snowmelt season begins in earnest. Rainfall combined with snowmelt could cause rapid rises in streamflow levels later this spring.

SOUTHSIDE SNAKE RIVER BASINS  
Streamflow Forecasts - April 1, 1997

Forecast Point	Forecast Period	<< Drier >>		Future Conditions		>> Wetter <<		30-Yr Avg. (1000AF)
		90%	70%	Chance Of Exceeding *		30%	10%	
		(1000AF)	(1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	(1000AF)	(1000AF)	
OAKLEY RESV INFLOW	APR-JUL	30	36	40	145	45	52	28
	APR-SEP	33	39	44	143	49	57	31
SALMON FALLS CREEK nr San Jacinto	APR-JUN	93	111	124	167	138	161	75
	APR-JUL	98	118	132	166	147	171	80
	APR-SEP	104	124	138	164	153	177	84
BRUNEAU near Hot Springs	APR-JUL	225	273	309	148	347	407	209
	APR-SEP	235	286	323	146	362	425	221
OWYHEE near Gold Creek (2)	APR-JUL	16.1	23	28	112	34	43	25
OWYHEE nr Owyhee (2)	APR-JUL	62	82	96	112	110	130	86
OWYHEE near Rome	APR-JUL	310	390	449	119	513	614	377
OWYHEE RESV INFLOW	APR-JUL	291	362	415	106	472	561	390
	APR-SEP	314	387	440	105	497	587	418
SUCCOR CK nr Jordan Valley	APR-JUL	8.12	11.92	14.50	151	17.08	20.88	9.60
SNAKE RIVER at King Hill (2)	APR-JUL			3990	138			2896
SNAKE RIVER near Murphy (2)	APR-JUL			4080	137			2980
SNAKE RIVER at Weiser (2)	APR-JUL			8750	160			5465
SNAKE RIVER at Hells Canyon Dam	APR-JUL			9740	159			6129
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	27484	30865	32400	150	33935	37316	21650

SOUTHSIDE SNAKE RIVER BASINS Reservoir Storage (1000 AF) - End of March					SOUTHSIDE SNAKE RIVER BASINS Watershed Snowpack Analysis - April 1, 1997			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
OAKLEY	77.4	37.7	34.8	34.0	Raft River	5	117	139
SALMON FALLS	182.6	76.1	76.8	62.3	Goose-Trapper Creeks	6	107	124
WILDHORSE RESERVOIR	71.5	67.5	48.4	38.2	Salmon Falls Creek	6	109	121
OWYHEE	715.0	682.7	677.0	579.0	Bruneau River	8	87	108
BROWNLEE	1419.3	665.8	918.3	893.1	Owyhee Basin Total	20	90	92

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

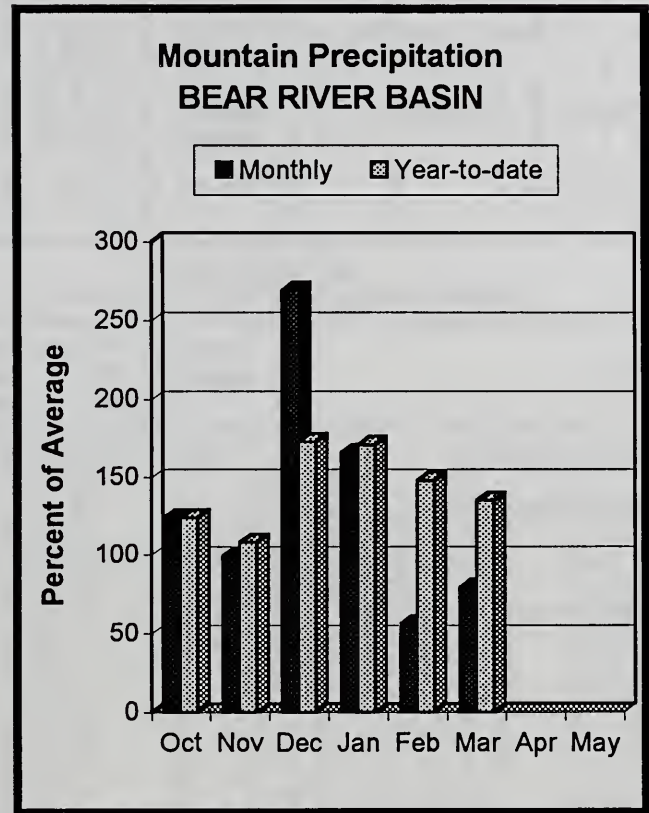
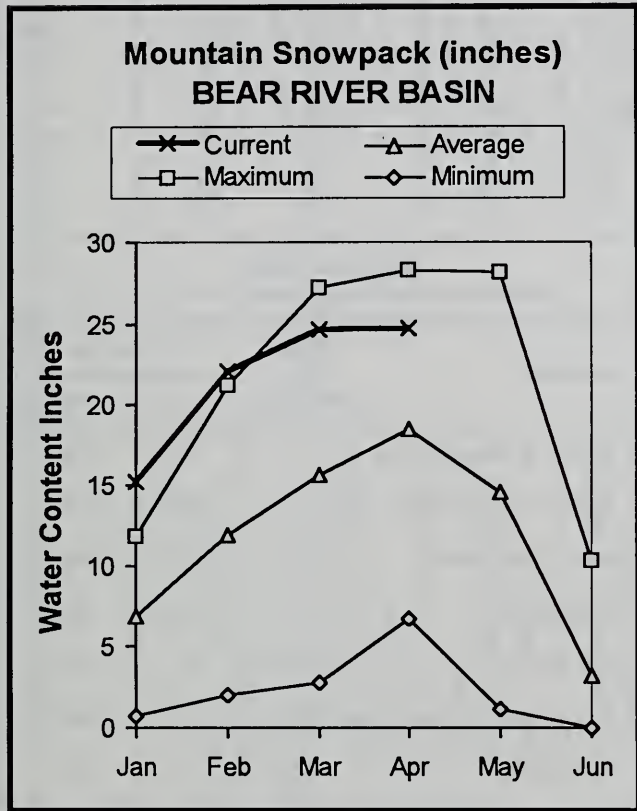
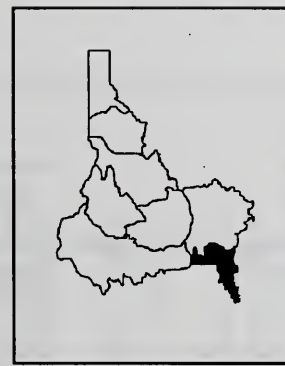
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# BEAR RIVER BASIN

## APRIL 1, 1997



## WATER SUPPLY OUTLOOK

March precipitation was about three quarters of average, bringing the water year total to 135%. Snowpacks remain well above average and range from 127% in the Malad basin to 151% in the Cub River basin. Overall, the Bear River basin is 136% of average, the third highest since 1961. Only 1986 and 1965 had a greater snowpack than this year. Low elevation sites are starting to melt but cool nights are keeping melt rates low – good news from a flooding standpoint. The April-September streamflow forecasts remain high and call for 141% of average (20,000 acre-feet) for Montpelier Creek and 144% for the Bear River at Stewart Dam. Storage in Bear Lake and Montpelier Creek reservoirs are near normal for this time of year after some drafting occurred in preparation for the high runoff. Montpelier Creek reservoir is less than half full and will fill this year. Operators of the numerous small reservoirs in the area should monitor storage, inflow and weather conditions closely to maintain adequate space for peak inflows. Residents in low lying areas still need to be aware of the possibility of high flows when the snowmelt season begins in earnest. A continuation of the current weather patterns – moderate daytime temperatures with cool nights – will help melt this year's abundant snowpack in an orderly fashion.

BEAR RIVER BASIN  
Streamflow Forecasts - April 1, 1997

Forecast Point	Forecast Period	<<==== Drier      Future Conditions      Wetter =====>>						30-Yr Avg. (1000AF)
				Chance Of Exceeding *				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
BEAR R nr Randolph, UT	APR-JUL	100	139	165	140	191	230	118
	APR-SEP	107	151	180	142	209	253	127
SMITHS FORK nr Border, WY	APR-JUL	127	141	150	147	159	173	102
	APR-SEP	144	159	170	144	181	196	118
THOMAS FK nr WY-ID State Line	APR-JUL	28	38	46	139	56	74	33
	APR-SEP	31	41	50	139	60	80	36
BEAR R blw Stewart Dam nr Montpelier	APR-JUL	318	373	410	142	447	502	288
	APR-SEP	365	427	470	144	513	575	327
MONTPELIER CK nr Montpelier (2)	APR-JUL	11.6	14.6	17.0	139	19.8	25	12.2
	APR-SEP	14.1	17.4	20	141	23	28	14.2
CUB R nr Preston	APR-JUL	58	63	67	143	71	76	47

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of March					BEAR RIVER BASIN Watershed Snowpack Analysis - April 1, 1997			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
WOODRUFF NARROWS	57.3	57.3	53.0	---	Smiths & Thomas Forks	3	118	136
WOODRUFF CREEK	4.0	4.0	4.0	---	Bear River ab WY-ID line	10	102	127
BEAR LAKE	1421.0	945.3	658.5	1002.1	Montpelier Creek	2	118	135
MONTPELIER CREEK	4.0	1.6	2.9	1.6	Mink Creek	4	134	139
					Cub River	3	134	151
					Bear River ab ID-UT line	22	117	136
					Malad River	3	115	127

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.



## Streamflow Adjustment List For All Forecasts Published In Idaho Basin Outlook Report

Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and interbasin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report.

### Panhandle River Basins

KOOTENAI R AT LEONIA, ID  
+ LAKE KOOCANUSA (STORAGE CHANGE)  
CLARK FORK R AT WHITEHORSE RAPIDS, ID  
+ HUNGRY HORSE (STORAGE CHANGE)  
+ FLATHEAD LAKE (STORAGE CHANGE)  
+ NOXON RAPIDS RESV (STORAGE CHANGE)  
PEND OREILLE LAKE INFLOW, ID  
+ PEND OREILLE R AT NEWPORT, WA  
+ HUNGRY HORSE (STORAGE CHANGE)  
+ FLATHEAD LAKE (STORAGE CHANGE)  
+ NOXON RAPIDS (STORAGE CHANGE)  
+ PEND OREILLE LAKE (STORAGE CHANGE)  
PRIEST R NR PRIEST R, ID  
+ PRIEST LAKE (STORAGE CHANGE)  
COEUR D'ALENE R AT ENAVILLE, ID - No Corrections  
ST. JOE R AT CALDER, ID - No Corrections  
SPOKANE R NR POST FALLS, ID  
+ COEUR D'ALENE LAKE (STORAGE CHANGE)  
SPOKANE R AT LONG LAKE, ID  
+ COEUR D'ALENE LAKE (STORAGE CHANGE)

### Clearwater River Basin

CLEARWATER R AT OROFINO, ID - No Corrections  
DWORSHAK RESERVOIR INFLOW, ID  
+ CLEARWATER R NR PECK, ID  
+ DWORSHAK RESV (STORAGE CHANGE)  
- CLEARWATER R AT OROFINO, ID  
CLEARWATER R AT SPALDING, ID  
+ DWORSHAK RESV (STORAGE CHANGE)

### Salmon River Basin

SALMON R AT SALMON, ID - No Corrections  
SALMON R AT WHITE BIRD, ID - No Corrections

### Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections  
SF PAYETTE R AT LOWMAN, ID - No Corrections  
DEADWOOD RESERVOIR INFLOW, ID  
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN  
+ DEADWOOD RESV (STORAGE CHANGE)  
NF PAYETTE R AT CASCADE, ID  
+ CASCADE RESV (STORAGE CHANGE)  
NF PAYETTE R NR BANKS, ID  
+ CASCADE RESV (STORAGE CHANGE)  
PAYETTE R NR HORSESHOE BEND, ID  
+ DEADWOOD RESV (STORAGE CHANGE)  
+ CASCADE RESV (STORAGE CHANGE)  
BOISE R NR TWIN SPRINGS, ID - No Corrections  
SF BOISE R AT ANDERSON RANCH DAM, ID  
+ ANDERSON RANCH RESV (STORAGE CHANGE)  
MORES CK NR ARROWROCK DAM, ID - No Corrections  
BOISE R NR BOISE, ID  
+ ANDERSON RANCH RESV (STORAGE CHANGE)  
+ ARROWROCK RESV (STORAGE CHANGE)  
+ LUCKY PEAK RESV (STORAGE CHANGE)

### Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections  
BIG WOOD R NR BELLEVUE, ID - No Corrections  
CAMAS CK NR BLAINE, ID - No Corrections  
BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID  
+ MAGIC RESV (STORAGE CHANGE)  
LITTLE WOOD R NR CAREY, ID  
+ LITTLE WOOD RESV (STORAGE CHANGE)  
BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections  
Corrections  
BIG LOST R BLW MACKAY RESV NR MACKAY, ID  
+ MACKAY RESV (STORAGE CHANGE)  
LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections

### Upper Snake River Basin

HENRYS FORK NR ASHTON, ID  
+ HENRYS LAKE (STORAGE CHANGE)  
+ ISLAND PARK RESV (STORAGE CHANGE)  
HENRYS FORK NR REXBURG, ID  
+ HENRYS LAKE (STORAGE CHANGE)  
+ ISLAND PARK RESV (STORAGE CHANGE)  
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID  
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID  
FALLS R NR SQUIRREL, ID (Discontinued)  
+ GRASSY LAKE (STORAGE CHANGE)  
TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections  
TETON R NR ST. ANTHONY, ID  
- CROSS CUT CANAL  
+ SUM OF DIVERSIONS ABV GAGE  
SNAKE R NR MORAN, WY  
+ JACKSON LAKE (STORAGE CHANGE)  
PACIFIC CK AT MORAN, WY - No Corrections  
SNAKE R ABV PALISADES RESV NR ALPINE, WY  
+ JACKSON LAKE (STORAGE CHANGE)  
GREYS R ABV PALISADES RESV, WY - No Corrections  
SALT R ABV RESV NR ETNA, WY - No Corrections  
PALISADES RESERVOIR INFLOW, ID  
+ SNAKE R NR IRWIN, ID  
+ PALISADES RESV (STORAGE CHANGE)  
+ JACKSON LAKE (STORAGE CHANGE)  
SNAKE R NR HEISE, ID  
+ PALISADES RESV (STORAGE CHANGE)  
+ JACKSON LAKE (STORAGE CHANGE)  
SNAKE R NR BLACKFOOT, ID  
+ PALISADES RESV (STORAGE CHANGE)  
+ JACKSON LAKE (STORAGE CHANGE)  
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES  
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID  
PORTNEUF R AT TOPAZ, ID - No Corrections  
AMERICAN FALLS RESERVOIR INFLOW, ID  
+ SNAKE R AT NEELEY, ID  
+ AMERICAN FALLS (STORAGE CHANGE)  
+ PALISADES RESV (STORAGE CHANGE)  
+ JACKSON LAKE (STORAGE CHANGE)

## Southside Snake River Basins

**RESERVOIR CAPACITY DEFINITIONS** - Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. The table below lists these volumes for each reservoir in this report, and defines the storage volumes that NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage.

- + TRAPPER CK NR OAKLEY, ID
- SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
- BRUNEAU R NR HOT SPRINGS, ID - No Corrections
- OWYHEE R NR GOLD CK, NV
  - + WILDHORSE RESV (STORAGE CHANGE)
- OWYHEE R NR ROME, OR
  - + WILDHORSE RESV (STORAGE CHANGE)
  - + JORDAN VALLEY RESV (STORAGE CHANGE)
- OWYHEE RESERVOIR INFLOW, OR
  - + OWYHEE R BLW OWYHEE DAM, OR
  - + OWYHEE RESV (STORAGE CHANGE)
  - + DIV TO NORTH AND SOUTH CANALS
- SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
  - SNAKE R - KING HILL, ID - No Corrections
  - SNAKE R NR MURPHY, ID - No Corrections
  - SNAKE R AT WEISER, ID - No Corrections
  - SNAKE R AT HELLS CANYON DAM, ID
    - + BROWNLEE RESV (STORAGE CHANGE)

## Bear River Basin

BEAR R NR RANDOLPH, UT

- + SULPHUR CK RESV (STORAGE CHANGE)
- + CHAPMAN CANAL DIVERSION
- + WOODRUFF NARROWS RESV (STORAGE CHANGE)

SMITHS FORK NR BORDER, WY - No Corrections

THOMAS FORK NR WY-ID STATELINE - No Corrections

BEAR R BLW STEWART DAM, ID

- + SULPHUR CK RESV (STORAGE CHANGE)
- + CHAPMAN CANAL DIVERSION
- + WOODRUFF NARROWS RESV (STORAGE CHANGE)
- + TOTAL OF 12 CANALS
- + WESTFORK CANAL
- + DINGLE INLET CANAL
- + RAINBOW INLET CANAL

MONTPELIER CK NR MONTPELIER, ID

- + MONTPELIER CK RESV (STORAGE CHANGE)

CUB R NR PRESTON, ID - No Corrections

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS FIGURES INCLUDE
<u>PANHANDLE REGION</u>						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD + INACTIVE + ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE + ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD + INACTIVE + ACTIVE
<u>CLEARWATER BASIN</u>						
DWORSHAK	--	1452.00	2007.00	--	3459.0	INACTIVE + ACTIVE
<u>WEISER/BOISE/PAYETTE BASINS</u>						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	50.00	653.20	--	703.2	INACTIVE + ACTIVE
DEADWOOD	1.50	--	161.90	--	161.9	ACTIVE
ANDERSON RANCH	29.00	41.00	423.18	--	464.2	INACTIVE + ACTIVE
ARROWROCK	--	--	286.60	--	286.6	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE + ACTIVE
LAKE LOWELL	--	8.00	169.10	--	169.1	ACTIVE
<u>WOOD/LOST BASINS</u>						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
<u>UPPER SNAKE BASIN</u>						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE + SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD + INACTIVE + ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
<u>SOUTHSIDE SNAKE BASINS</u>						
OAKLEY	--	--	77.40	--	77.4	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE + ACTIVE
<u>BEAR RIVER BASIN</u>						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD + ACTIVE



# Interpreting Streamflow Forecasts

## Introduction

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflows are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

**Most Probable (50 Percent Chance of Exceeding) Forecast.** This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations. There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast: it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

## To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

**70 Percent Chance of Exceeding Forecast.** There is a 70 percent chance that the streamflow volume will exceed this forecast value. There is a 30 percent chance the streamflow volume will be less than this forecast value.

**90 Percent Chance of Exceeding Forecast.** There is a 90 percent chance that the streamflow volume will exceed this forecast value. There is a 10 percent chance the streamflow volume will be less than this forecast value.

## To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

**30 Percent Chance of Exceeding Forecast.** There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

**10 Percent Chance of Exceeding Forecast.** There is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

## Using the forecasts - an example

**Using the Most Probable Forecast.** Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Deeth between March 1 and July 31.

**Using the Higher Exceedance Forecasts.** If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

**Using the Lower Exceedance Forecasts.** If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

UPPER HUMBOLDT RIVER BASIN									
STREAMFLOW FORECASTS									
FORECAST POINT	FORECAST PERIOD	FUTURE CONDITIONS-----WETTER----->							
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)	25 YR (1000AF)		
MARY'S RIVER nr Deeth	MAR-JUL	5.0	20.0	36	77	52	76	47	
	APR-JUL	8.0	17.0	31	74	45	67	42	
LAMOILLE CREEK nr Lamolille	MAR-JUL	6.0	16.0	24	79	32	43	31	
	APR-JUL	4.0	15.0	22	75	30	41	30	
NR HUMBOLDT RIVER at Devils Gate	MAR-JUL	6.0	12.0	43	73	74	121	59	

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A Field Office Guide for Interpreting Streamflow Forecasts".



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